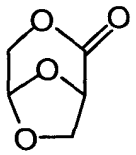
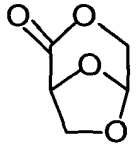
WE CLAIM:

1. A process for preparing compounds of formula **VII** or **VIII**:



VII



VIII

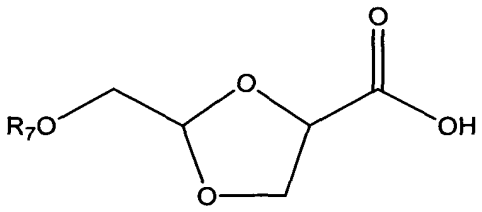
comprising the steps of:

oxidation of 1,2-O-protected-glycerol to an acid salt, or hydrolysis of methyl (R)- or (S)-1,2-O-protected-glycerate to form intermediate 1;

alkylation of intermediate 1 with a compound of formula $X'CH_2CH(OR_6)_2$, wherein X' is halogen or pseudohalogen, and R_6 is alkyl or aralkyl (C_{1-20}); and

cyclization with an acid catalyst optionally with hydrolysis of the acetal.

2. The process according to claim 1, further comprising hydrolysis of the ester group of the compound of formula **VII** or **VIII** followed by protection of the resulting alcohol under basic conditions to a compound of formula **6** (including D- and L-isomers):

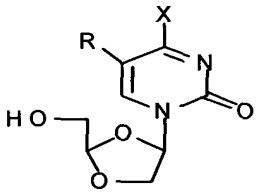


6

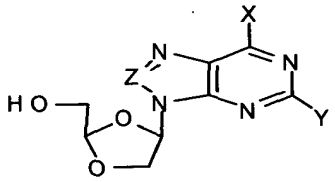
wherein R_7 is a protecting group.

3. The process of claim 2, wherein R_7 is acyl, silyl, alkyl or an aralkyl group (C_{1-20}).

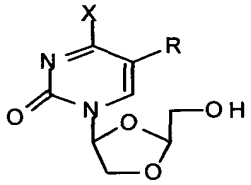
4. The process of claim 2, further comprising decarboxylation of the carboxylic group of compound **6**, and coupling with a purine or pyrimidine base or its derivative, followed by deprotection to form a D- and L-dioxolane nucleoside of formulae **III-VI**:



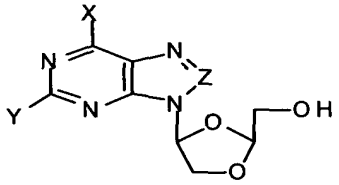
III



IV



V



VI

wherein

R is H, halogen, OH, OR', SH, SR', NH_2, NHR', NR'$_2$, lower alkyl of C_1-C_4, $CH{=}CH_2$, $N_3C{=}CH_2$, CO_2H, CO_2R', $CONH_2$, CN, CONHR', CH_2OH, CH_2CN, CH_2CH_2OH, CF_3, CH_2CH_2F, $CH{=}CHCO_2H$, $CH{=}CHCO_2R'$, CH=CHCl, CH=CHBr, or CH=CHI;

R' is lower alkyl (C_1-C_4);

each X and Y are independently H, halogen, OH, OCH_3, SH, SCH_3, NH_2, NHR', NR'$_2$, or CH_3; and

Z is CH, or C-X.

5. The process according to claim 2, wherein the base used for hydrolysis of the ester of formula **VII** and **VIII** is an organic or inorganic base or combination thereof.

6. The process of claim 5 wherein the base is an aqueous alkali or alkali earth metal base.

7. The process of claim 6, wherein the base is aqueous NaOH or aqueous KOH.

8. The process of claim 1, wherein the oxidation is conducted using an oxidizing agent selected from the group consisting of $NaIO_4/RuCl_3$ hydrate, $NaOCl/RuCl_3$ hydrate, $KMnO_4$, $NaIO_4$ and KIO_4 and combinations thereof.

9. The process of claim 4, wherein decarboxylation is carried out at from about –10 °C to 100 °C, in an aprotic solvent or water, or combination thereof.

10. The process of claim 9, wherein the solvent is an aprotic solvent.

11. The method of claim 10, wherein the solvent is hexane, cyclohexane, toluene, ethyl acetate, THF, dioxane, acetonitrile, dichloromethane, dichloroethane, diethyl ether, dimethylformamide (DMF), dimethylsulfoxide (DMSO), dimethylacetamide, or a combination thereof.

12. The process of claim 1, wherein the acid is a Lewis acid.

13. The process of claim 1, wherein the acid is BF_3 etherate.

14. The process of claim 4, comprising coupling the purine or pyrimidine base or its derivative by:

silylation of the base or its derivative; and

coupling of the silylated base or its derivative to the compound of Formula 6 in the presence of a Lewis acid.

15. The process of claim 14, wherein the Lewis acid is selected from the group consisting of tin tetrachloride, titanium tetrachloride or trimethylsilyl triflate.

16. The process of claim 14, wherein the base or its derivative is silylated with hexamethyldisilazane (HMDS).

17. The process of claim 4, further comprising isolating the nucleoside of formula II-VI in optically active form.

18. The process of claim 17, wherein the optically active form is isolated by resolution of the racemic form by recrystallization techniques, by synthesis from optically-active starting materials, by chiral synthesis, or by chromatographic separation using a chiral stationary phase.

19. The process of claim 4, wherein the purine or pyrimidine base is selected from the group consisting of adenine, N^6-alkyl-purines, N^6-acylpurines (wherein acyl is C(O)(alkyl, aryl, alkylaryl, or arylalkyl), N^6-benzylpurine, N^6-halopurine, N^6-vinylpurine, N^6-acetylenic purine, N^6-acyl purine, N^6-hydroxyalkyl purine, N^6-thioalkyl purine, N^2-alkylpurines, N^2-alkyl-6-thiopurines, thymine, cytosine, 5-fluoro-cytosine, 5-methylcytosine, 6-azapyrimidine, including 6-aza-cytosine, 2- and/or 4-mercapto-pyrimidine, uracil, 5-halouracil, including 5-fluorouracil, C^5-alkylpyrimidines, C^5-benzyl-pyrimidines, C^5-halopyrimidines, C^5-vinylpyrimidine, C^5-acetylenic pyrimidine, C^5-acyl pyrimidine, C^5-hydroxyalkyl purine, C^5-amido-pyrimidine, C^5-cyanopyrimidine, C^5-nitro-pyrimidine, C^5-aminopyrimidine, N^2-alkyl-purines, N^2-alkyl-6-thiopurines, 5-azacytidinyl, 5-aza-uracilyl, triazolopyridinyl, imidazolo-pyridinyl, pyrrolopyrimidinyl, and pyrazolopyrimidinyl.